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09/634,243	08/08/2000	Yukito Kawahara	S004-4049	2427

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EXAMINER

KIBLER, VIRGINIA M

ART UNIT PAPER NUMBER

2623

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/634,243

Applicant(s)

KAWAHARA ET AL.

Examiner

Virginia M Kibler

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on ____.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) ____ is/are withdrawn from consideration.

5) Claim(s) ____ is/are allowed.

6) Claim(s) 1-26 is/are rejected.

7) Claim(s) 18 is/are objected to.

8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 08 August 2000 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. ____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). ____.

2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) Other: ____

DETAILED ACTION

Claim Objections

1. Claim 18 is objected to because of the following informalities: Claim 18 is identical in limitations and dependency to claim 15 except for line 3, reciting "one of a lens or a lens array." Claim 15 recites "one of a lens and a lens array." The difference between the two claims is unclear. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 21 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 21 and 23 recite the limitation "active matrix liquid crystal cell" in line 2. There is insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 5, 6, 10-16, and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Johnson (6,191,410).

Regarding claim 1, Johnson discloses a fingerprint reading device including an active matrix liquid crystal cell 22 (Col. 4, lines 43-47) having a front surface facing a user and a rear surface opposing the front surface (Figure 3), an illumination source 21 for projecting a light from the rear surface to the front surface of the active matrix liquid crystal cell (Col. 4, lines 39-40), a light guiding plate 1 on the front surface of the active matrix liquid crystal cell for transmitting the light projected from the rear surface of the active matrix liquid crystal cell and deflecting light entering from the front surface toward a side end surface of the light guiding plate (Figure 3), light receiving means 3 on the side end surface of the light guiding plate for receiving the deflected light exiting from the side end surface of the light guiding plate (Figure 3), and a drive circuit for driving the active matrix liquid crystal cell to pinpoint-irradiate a fingerprint in contact with the light guiding plate by pinpointing with the light emitted from the illumination source and causing the light receiving means to pinpoint-receive the light reflected by the fingerprint and thereby obtain an image of the fingerprint (Col. 1, lines 46-49; Col. 2, lines 57-67 and Col. 3, lines 1-16).

Regarding claim 2, Johnson discloses the active matrix liquid crystal cell comprising a liquid crystal cell of a liquid crystal display device (Col. 1, lines 46-49).

Regarding claim 5, Johnson discloses the light receiving means comprising a light receiving element 3 and a lens 23 for converging on the light receiving element the light exiting from the side end surface of the light guiding plate (Figure 3).

Regarding claim 6, Johnson discloses a method for providing an active matrix liquid crystal cell (Col. 4, lines 43-47), an illuminating means 21 for projecting light from a rear surface of the active matrix liquid crystal cell (Col. 4, lines 39-40), a light guiding plate 1 on a front surface of the active matrix liquid crystal cell opposite the rear surface for receiving the light coming from the rear surface and deflecting the received light toward a side end surface of the light guiding plate (Figure 3), selectively pinpoint-irradiating a fingerprint touching a front surface of the light guiding plate through the active matrix liquid crystal cell with the light projected from the rear surface of the active matrix liquid crystal cell (Col. 4, lines 43-47), receiving the light 3 reflected by the fingerprint and exiting from the side end surface of the light guiding plate (Figure 3), and using the received light reflected by the fingerprint to obtain an image of the fingerprint (Col. 2, lines 57-67 and Col. 3, lines 1-16).

Regarding claim 10, Johnson discloses the side end surface 8 of the light guiding plate 1 is disposed at a right angle with respect to the front and rear surfaces of the active matrix liquid crystal cell 22 (Figure 3).

Regarding claim 11, Johnson discloses a fingerprint reading device including a liquid crystal cell having a plurality of separately addressable pixels (Col. 4, lines 39-40), a front surface facing a user and a rear surface opposite the front surface (Figure 3), an illumination device 21 for projecting light from behind the rear surface through the front surface of the liquid crystal cell to illuminate a finger place over the front surface (Figure 3), a light receiving device 3 for receiving light reflected by the finger, and a drive circuit for sequentially driving the respective pixels of the liquid crystal cell (Col. 4, lines 39-47) to project light from the

illumination device onto the finger so that an image of the finger can be obtained based on the reflected light (Col. 2, lines 57-67 and Col. 3, lines 1-16).

Regarding claim 12, Johnson discloses an active matrix liquid crystal cell (Col. 4, lines 43-47).

Regarding claim 13, Johnson discloses using a light guiding plate 1 disposed over the front surface of the liquid crystal cell for transmitting the light projected from the rear surface of the liquid crystal cell and deflecting light entering from the front surface toward a side end surface of the light guiding plate (Figure 3).

Regarding claim 14, Johnson discloses the light receiving device 3 disposed adjacent to the side end surface of the light guiding plate 1 for receiving the deflected light (Figure 3).

Regarding claim 15, the arguments analogous to those presented above for claim 5 are applicable to claim 15.

Regarding claim 16, Johnson discloses a drive circuit controlling the liquid crystal cell by sequentially activating respective pixels thereof so that the light emitted by the illumination device is irradiated onto the fingerprint pixel by pixel (Col. 4, lines 39-55) and light reflected by the fingerprint is received by the light receiving device 3 so that an image of the finger can be obtained (Col. 2, lines 66-67 and Col. 3, lines 1-16).

Regarding claim 18, the arguments analogous to those presented above for claim 5 are applicable to claim 18.

Regarding claim 19, the arguments analogous to those presented above for claim 10 are applicable to claim 19.

Regarding claim 20, the arguments analogous to those presented above for claim 2 are applicable to claim 20.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (6,191,410) as applied to claim 1 above, and further in view of Young (5,869,791).

Regarding claim 7, Johnson does not appear to explicitly state a matrix of transparent electrodes driven by thin film switching elements. However, Young teaches that it is known to use an active matrix liquid crystal cell (Col. 3, lines 49-53) with a matrix of transparent (Col. 3, lines 40-41) electrodes driven by thin film switching elements (Col. 3, lines 57-66). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the active matrix liquid crystal cell disclosed by Johnson to expressly state a matrix of transparent electrodes driven by thin film switching element, as taught by Young, in order to be integrated with a LCD panel (Col. 3, lines 49-53).

Regarding claim 8, Young discloses the thin film switching elements comprising TFTs (Col. 3, lines 57-66).

Regarding claim 3, Young discloses the active matrix liquid crystal cell provided in superposition on part of a liquid crystal cell of a LCD device (Col. 3, lines 49-57).

8. Claims 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (6,191,410) as applied to claim 11 above, and further in view of Young (5,869,791).

Regarding claim 24, the arguments analogous to those presented above for claim 7 are applicable to claim 24.

Regarding claim 25, the arguments analogous to those presented above for claim 8 are applicable to claim 25.

Regarding claim 23, the arguments analogous to those presented above for claim 3 are applicable to claim 23.

Regarding claim 21, Young discloses an active matrix liquid crystal cell including a first transparent substrate 14, a second transparent substrate 45, a spacer joining the first and second transparent substrates so that a gap is formed there between, a layer of liquid crystal material 48 filled in the gap, and a plurality of pixel elements arranged in a matrix for altering the light transmission characteristics of the liquid crystal material (Col. 10, lines 52-67).

Regarding claim 22, Young discloses the pixel elements comprising a transparent electrode and an active switching element formed on one of the transparent substrates facing the liquid crystal material layer (Col. 10, lines 60-67).

9. Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (6,191,410) as applied to claim 1 above.

Regarding claim 4, Johnson discloses a light receiving sensor provided along the side end surface of the light guiding plate (Figure 3). Johnson does not appear to specify the light

receiving means including a line sensor. However, Johnson discloses using a grid of receptors as the light receiving sensors (Col. 2, lines 42-44). Therefore, in light of Johnson's disclosure it would have been obvious to one of ordinary skill in the art to have modified the light receiving sensor to include a line sensor as a design parameter.

Regarding claim 9, Johnson does not appear to specify the resolution and the pitch of the active matrix liquid crystal cell. However, in light of Johnson's disclosure this would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the active matrix liquid crystal cell disclosed by Johnson to expressly state a specific resolution and pitch as a design parameter.

10. Claims 17 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (6,191,410) as applied to claim 11 above.

Regarding claim 17, the arguments analogous to those presented above for claim 4 are applicable to claim 17.

Regarding claim 26, the arguments analogous to those presented above for claim 9 are applicable to claim 26.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 6,310,683 to Fujiwara et al. for reading fingerprint; and

U.S. Pat. No. 5,446,290 to Fujieda et al. for fingerprint image input device having an image sensor with openings.

Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia M Kibler whose telephone number is (703) 306-4072. The examiner can normally be reached on Mon. - Thurs. 8:00 - 5:30 and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

VK
May 2, 2003



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